

## WHAT IS CLAIMED IS:

1. A method of performing a clean check on a gearbox, said method comprising the steps of:

(a) flushing an oil-based fluid through said gearbox and then through a filter;

(b) weighing said filter to determine the weight of contaminants collected in said filter; and

(c) comparing said contaminant weight to a predetermined level, wherein said gearbox is acceptable if said contaminant weight is below said predetermined level.

2. The method of claim 1 further comprising the step of soaking said filter in a solvent prior to said step of weighing said filter.

3. The method of claim 2 wherein said step of soaking said filter in a solvent includes soaking said filter for about 30 minutes or more.

4. The method of claim 1 further comprising the steps of soaking said filter in a first solvent prior to said step of weighing said filter and then soaking said filter in a second solvent.

5. The method of claim 4 wherein said first solvent is mineral spirits and said second solvent is isopropyl alcohol.

~~6. The method of claim 1 further comprising the step of flushing said oil-based fluid through another filter prior to flushing said oil-based fluid through said gearbox.~~

7. The method of claim 1 wherein said filter is a 3 micron collection filter.

8. The method of claim 1 wherein said oil-based fluid is MIL-L-23699 oil.

9. The method of claim 1 wherein said step of flushing an oil-based fluid through said gearbox and then said filter includes flushing about 50 gallons of said oil-based fluid through said gearbox at about 40 pounds per square inch.

10. The method of claim 1 wherein steps (a)-(c) are repeated if said contaminant weight is above said predetermined level.

11. The method of claim 1 wherein said gearbox is a finally assembled, closed gearbox.

12. A method of performing a clean check on a finally assembled, closed gearbox, said method comprising the steps of:

(a) flushing an oil-based fluid through said gearbox and then through a first filter;

(b) soaking said first filter in a solvent;

(c) passing said solvent through a second filter;

(d) weighing said first and second filters to determine the weight of contaminants collected therein; and

(e) comparing said contaminant weight to a predetermined level, wherein said gearbox is acceptable if said contaminant weight is below said predetermined level.

13. The method of claim 12 wherein said step of soaking said first filter in a solvent includes soaking said first filter for about 30 minutes or more.

14. The method of claim 12 further comprising the steps of: soaking said first filter in a second solvent, subsequently to said step of soaking said first filter in said first-mentioned solvent; and passing said second solvent through said second filter.

15. The method of claim 14 wherein said first-mentioned solvent is mineral spirits and said second solvent is isopropyl alcohol.

16. The method of claim 12 wherein said first and second filters are 3 micron collection filters.

17. The method of claim 12 wherein said oil-based fluid is MIL-L-23699 oil.

5 18. The method of claim 12 wherein said step of flushing an oil-based fluid through said gearbox and then said first filter includes flushing about 50 gallons of said oil-based fluid through said gearbox at about 40 pounds per square inch.

10 ~~19. The method of claim 12 further comprising the step of flushing said oil-based fluid through another filter prior to flushing said oil-based fluid through said gearbox.~~

20. The method of claim 12 wherein steps (a)-(e) are repeated if said contaminant weight is above said predetermined level.

15 ~~21. A system for performing a clean check on a gearbox having an inlet and an outlet, said system comprising:  
a source of an oil-based fluid fluidly connected to said gearbox inlet;  
a filter fluidly connected to said gearbox outlet; and  
means for causing said oil-based fluid to flow through said gearbox and said filter.~~

20 22. The system of claim 21 wherein said means for causing said oil-based fluid to flow through said gearbox and said filter is a pump.

23. The system of claim 21 wherein said filter is a 3 micron collection filter.

25 24. The system of claim 21 wherein said oil-based fluid is MIL-L-23699 oil.

25. ~~The system of claim 21 further comprising means for soaking said filter in a solvent.~~

26. The system of claim 25 wherein said solvent is mineral spirits.

27. The system of claim 25 wherein said solvent is isopropyl alcohol,

28. The system of claim 25 further comprising a second filter for passing said solvent through.

29. The system of claim 21 further comprising a second filter fluidly connected between said source of an oil-based fluid and said gearbox inlet.

30. ~~The system of claim 29 wherein said second filter is a 3 micron collection filter.~~